THE EFFECT OF AN ORAL HEALTH EDUCATION PROGRAM FOR YOUNG GIRLS IN MA TAU WEI GIRLS' HOME

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Advisors:

Dr. E. Schwarz
Dr. E.C.M. Lo

Group 5.3:

CHEN Kam Fai
CHEUNG Kwok Po
CHU Chi Ho
LAM Siu Yuk
LEE Hon Chung
MA Hau Chung, Christopher
WONG Miu Yee
YIP Ka Wai

CONTENT

1. ABSTRACT

This study was conducted to develop and implement an oral health education programme for a group of girls in a Girl's Home in Hong Kong. Our objectives were (1) to study their oral health status, (2) to conduct an oral health education programme, (3) to study the dental health related knowledge of the girls and (4) to evaluate the effectiveness of our education programme through the means of questionnaires and measurements of oral health indicators before and after the programme.

74 girls of Ma Tau Wei Girls' Home were clinically examined for oral hygiene status and caries experience. An interview was conducted to obtain information regarding dental health related behaviour, knowledge and awareness of the girls. After that, a dental health education programme was implemented, including demonstrations, slide show, board show and group discussion, in order to improve the girls' oral hygiene, dietary habits and their knowledge of common dental diseases. An oral health knowledge competition, including slogans, poster design, and a quiz, was held in order to provide a chance for the participants to digest our information and to ensure that they understood our information thoroughly.

The results indicated that the caries experience (DMF value) and periodontal status (CPITN value) were comparable to findings from previous Hong Kong Surveys. The short term evaluation (about 5 weeks) demonstrated an improvement in both dental health related knowledge and oral hygiene standard. When comparing the pre- and post-programme questionnaires, the peak number of correct answers gained concerning caries shifted from 2 to 4 and over 48% of the girls could give more than 5 correct answers during the 2nd visit as compared to 13.5% during the 1st visit. Concerning the knowledge of periodontal disease, in the 1st visit more than 85% of the girls had a very low level of knowledge, however, in the 2nd visit more than 67% of them demonstrated moderate to high knowledge. The most significant change was about the knowledge of plaque which showed that 90.5% of the girls could point out the characteristics and the harmful effects of plaque during the 2nd visit as compared to 14.9% during the 1st visit. When comparing the pre- and post-programme oral health examinations, the results were also very encouraging. The Visible Plaque Index decreased from 38.9% to 21.2% positive scores and the Gingival Bleeding Index decreased from 33% to 25.3% positive scores, both were statistically significant. On the basis of our conclusions, the following recommendations were made:

1. Regular dental check-ups are recommended as a basic dental health service for the girls in the Ma Tau Wei Girls' Home, not only limited to emergency treatment.

2. Oral health education can be carried out with periodic intervals by dental teams to deliver information and oral hygiene technique for the benefits of future girls' home's residents.

3. A programme design based on active participation is an effective method of learning for the girls.

4. Active girls can be appointed as leaders or group tutors in order to help those girls who are passive. Both parties should then benefit.

2. INTRODUCTION

The Ma Tau Wei Girls' Home, run by the Social Welfare Department, was opened in December 1963. It was then located in Ma Tau Wei Road. The Home in its present premises in Sheung Shing Street was officially opened on 9 October 1978. It functions as a combined (a) probation home, (b) place of refuge, (c) remand home and (d) place of detention for girls with behaviour problems. It caters for girls:

(a) On probation between the ages of 7 and 16 years. (Probation of Offenders Ordinance, Chapter 298)

(b) I. In need of care and protection, as female wards of the Director of Social Welfare, aged under 21. (Protection of Women and Juveniles Ordinance, Chapter 213)

II. In need of care and protection aged under 18. (Protection of Women and Juveniles Ordinance, Chapter 213)

(c) I. Under detention for criminal offenses, between the ages of 7 and 16 years. (Juvenile Offenders Ordinance, Chapter 226)

II. Under detention, illegal immigrants between the ages 7 and 16. (Immigration Ordinance, Chapter 115)

The total capacity for the whole home is 192 in the following components:

(a)	Probation Home	} Capacity: 96	} which together form the Long Term Section
(b)	Place of Refuge		
(c)	Remand Home	} Capacity: 96	} which together form the Remand Section
(d)	Place of Detention		

Girls placed on probation by courts for minor offences may be required to reside in the Home for a period from 6 months to 1 year, as a special condition of the probation orders. Those sent to the place of refuge usually stay in the Home for one year. Young girl offenders who have been found guilty of some serious offences are committed to custody in a place of detention for a period not exceeding 6 months. The Remand Section caters for

girls remanded by Courts pending court hearing. All admission and discharges are subject to court orders.

Probation home and place of refuge form the Long Term Section which provides three major training aspects, namely moral, academic and prevocational training. Besides, extra-curricular activities are arranged. Remand home and place of detention together form the Remand Section. Social work services, academic prevocational lessons are provided by the Remand Section. As the residents in the Remand Section usually stay for shorter periods, the training programmes would be on a short-term basis.

The Home has a large staff team of 79 members who provide adequate support to and effective supervision of the girls. The Home provides meals for the girls and staff and a balanced diet is provided. The water supply is the same as that for the public i.e. containing 0.5 ppm of fluoride. All the girls are provided with ordinary toothbrushes and fluoride-containing toothpaste. However, no toothpicks or dental floss are supplied. Regarding the dental care provided by the Home to the girls, only emergency dental treatment such as extraction is arranged in Lee Kei Government Dental Clinic. No regular dental check-up is arranged. Sweets are the usual prize given to the girls in such functions as competitions.

The reasons for carrying out an oral health project on this group of girls are as follows:

(1) They are a special group of girls who may need special attention in for instance health matters.

(2) As they are young girls who are going to have families later, they might act as mediators to deliver oral hygiene instruction which may benefit their future families.

(3) A project in a Girls' Home has not been carried out before, therefore the present project may act as a means of collecting baseline information.

3. AIM AND OBJECTIVES

The aim of the project was to develop and implement an oral health education programme for the girls in Ma Tau Wei Girls' Home with the following objectives:

1. To study the oral health status and dental health related knowledge of the girls in Ma Tau Wei Girls' Home.

2. To conduct an oral health education programme for this group, including demonstration, slide show, board show, and group discussion.

3. To provide simple dental treatment as appropriate.

4. To evaluate the effectiveness of our programme through the means of pre- and post-programme questionnaires, and through possible improvements in oral health measurements.

4. MATERIAL AND METHODS

4.1. Study Population

In agreement with the staff of the Home, the girls of the Long Term Section were selected as our target population. It was considered more useful to approach this group because the security measures were less stringent, and a larger proportion of them were expected to be in the Home for the whole duration of the project.

Eighty-eight girls present in the Section were examined and interviewed at the first round of visits. At the evaluation visit 7 weeks later, 14 girls had left the Home or were absent. The final study population consisted of the 74 girls who were present at both visits. There was no noticeable difference between the girls who comprised the study population and the girls who left the Home.

4.2. Programme Outline

The protocol of the project is given in the following table describing the activities for the duration of the project.

Visit	Date	Duration	Content
1	16-17/3/90	2 days	1) Questionnaire survey to investigate the dental health related knowledge and behaviour of the girls. 2) A clinical examination to investigate the dental health status of the girls.
2	2-3/4/90	2 days	1) Dental health education for the whole group. 2) Oral hygiene instruction in small groups of girls.
	4/4/90	1 day	1) Slogan and poster design competition. 2) Quiz on dental health.
3	5-6/5/90	2 days	1) Questionnaire survey and clinical examination of the girls to evaluate the effectiveness of the dental health education programme.

4.3. Clinical Examination

The following clinical parameters were assessed: Caries experience measured by DMFT; gingival status and oral hygiene by means of the Gingival Bleeding Index (GBI) and the Visible Plaque Index (VPI) according to guidelines and criteria laid down by Ainamo and Bay[1, 2]. In summary, both indices are dichotomous, visible plaque and gingival bleeding being scored only if present. Unilateral examination (right and left side alternately) was used, and the facial, mesial, and lingual surfaces were examined on each tooth, resulting in a maximum of 42 potential examination sites (7 teeth x 3 examination points x 2 jaws). The WHO periodontal probe was used for the examination. VPI and GBI scores are presented as percentages, calculated in this manner:

$$\frac{N \times 100}{S} \%,$$

Where N = number of examination sites with a positive VPI/GBI score (score 1), and S = number of sites examined. Periodontal conditions were assessed by CPITN as described by WHO[3]. The examination was conducted by 2 examiners and the results were recorded by dental students on standard examination forms (Appendix 1). Calibration was practised in the Prince Philip Dental Hospital Primary Care Unit, and subsequently on the first 5 girls examined, and inter-examiner reliability was considered satisfactory. During the examinations the girls lay on portable dental chairs and illumination was provided by fibre optic light mounted with disposable mirrors. For the caries status examination a sickle-shaped probe was used and for the gingival, visible plaque index and CPITN the WHO 621 probe was employed. Clinical examination criteria are given in Appendix 2.

4.4. Questionnaire

The subjects were interviewed individually by dental students. The interview was structured and based upon a questionnaire designed to gather information about the knowledge, beliefs and behaviour of the subjects with regard to dental health (Appendix 3). The questionnaire was divided into 4 parts:

(1) Personal data.

(2) Past dental experience.

(3) Existing dental status.

(4) Dental knowledge.

The questionnaire was in the form of a question followed by a range of possible answers. The interviewer read out the questions to the subjects. The possible choices of answers were not provided unless there was no response from the subject. This was to avoid leading the subjects. If an answer provided by the respondent was not covered by the possible choices, this reply was recorded in words.

The dental knowledge part of the questionnaire was repeated after the dental health education programme. This was to assess the dental knowledge improvement after the dental health education programme.

4.5. Oral Health Education Programme

The objectives of the first part of the oral health education programme were:

1) To convey general oral health knowledge especially about periodontal disease and caries to the girls.

2) To teach the girls correct toothbrushing technique and introduce them to different devices of cleaning teeth.

Procedure

The programme was conducted in the hall of Ma Tau Wei Girls' Home. The girls were separated into 4 groups, allocated as Group A, B, C, D. Each group comprised about 25 participants, and each group received the following programme during a ½ day session:

1) A slide show was delivered concerning the information of periodontal disease and caries including their etiology, pathology, treatment and prevention.

2) Demonstration boards with mounted illustrations and catchy texts were used to convey some dental knowledge to the girls including:
   - general concept of dentition
   - common dental disease ie. dental caries, and periodontal disease, their causes and consequences
   - the importance of dietary control
   - methods of preventing those dental diseases

- methods of preventing those dental diseases
- common cleansing devices
- common dental treatment provided against those diseases

This board show acted as a supplementary information and reinforcement model.

3. The whole group of girls were further subdivided into subgroups of 6-7 people. Each subgroup was taken care of by 2 students. This part of the demonstration was mainly concerned with practising different kinds of cleansing devices including:
   a) introducing the use of disclosing tablet and solution,
   b) teaching of flossing technique and single tuft brushing technique, and
   c) standardised modified miniscrub toothbrushing technique,
   d) reinforce the importance of fluoridated toothpaste against caries.

Demonstration models, disclosing tablet and solution, pamphlets and photos of oral hygiene instruction were all included as teaching aids to reinforce the oral hygiene knowledge. The girls were allowed to ask questions concerning oral health. After the demonstration toothbrushes and pamphlets were delivered to each girl as a souvenir.

The objectives of the second part of the oral health education programme were:

1) To refresh the girls' memory concerning the basic dental health knowledge conveyed during the lectures and discussions.

2) To reinforce the importance of dental health through interesting games.

3) To build up a positive attitude towards our programme and oral health knowledge.

Procedure

The girls were divided into the same 4 groups as on the first two days. Each group was required to design a slogan, a poster and to attend a quiz competition.

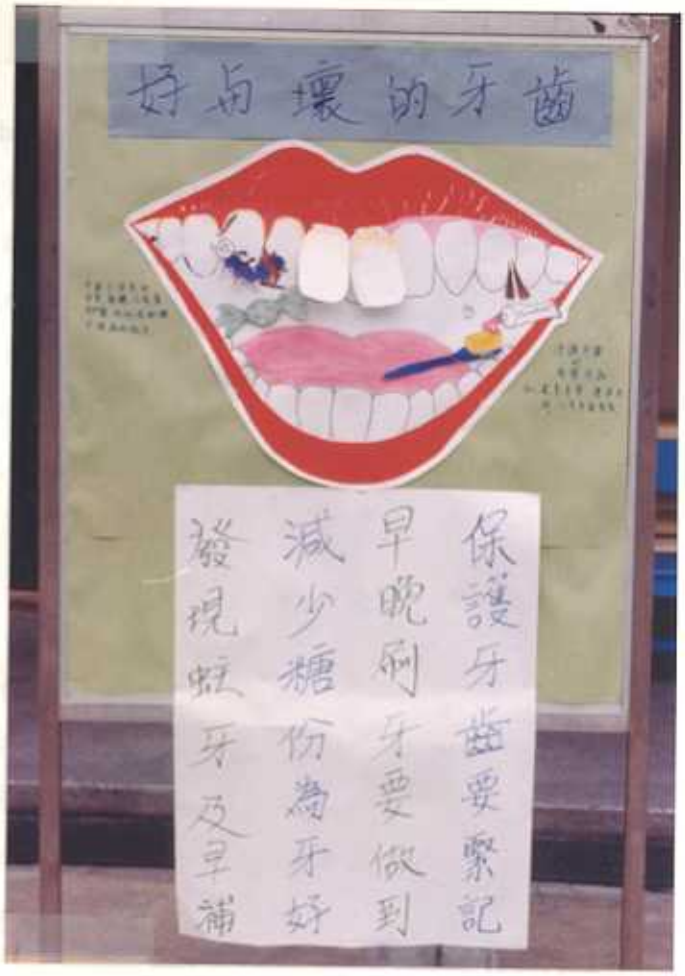
The topic and message conveyed in the slogan and picture should relate to oral health. Slogan design was limited by four sentences maximally and the size of the poster was also standardized. One morning session was allocated to complete the work and one hour supervision was given at the beginning by our member students. The results of this exercise are shown in the photographs on the next page, illustrating the four posters produced by each of the four groups.

A quiz competition was held in the afternoon session of the same day. Three representatives from each group were selected. The quiz comprised groups of questions concerning different aspects of oral health knowledge. The format used at the quiz was very similar to formats used in TV-quizzes with the selected contestants seated on a stage with the rest of the groups situated in the hall as audience who would applaud and cheer when a group got a correct answer. Prizes to the teams were presented after the competition.

4.6. Evaluation Survey

The format of the evaluation survey was similar to the baseline survey and took place about five weeks later. A questionnaire interview and a clinical examination were carried out. The questionnaire used mainly focused on oral health knowledge. The clinical examination was mainly on the visible plaque index and gingival bleeding index because these could be expected to show improvements in the short term. Same diagnostic criteria and examination procedures were used as in the baseline survey.


牙齒的類別
健康的牙齒
蛀牙
牙周病
粘膜
口腔清潔天天做。


好与壞的牙齒
保護牙齒要緊記
早晚刷牙要做到
減少糖份為牙好
發現蛀牙及早補


不正確
正確
牙齒護理應做好
親切笑容由齒露


口腔衛生與牙齒保健

4.7. Scaling Programme

During the evaluation it was realized that a small group of girls had such excessive amounts of calculus that their benefit from oral hygiene procedures could be in doubt. It was termed impractical for this project to establish a mobile treatment unit in the Home, because we focused more on oral health education, and due to general hygiene considerations. It was therefore decided to offer the Home that these girls could come to Prince Philip Dental Hospital and have scaling conducted under professionally more satisfactory conditions. A total of 8 girls were selected for this program, whose CPITN score together with a clinical assessment indicated a great need for scaling.

4.8. Data Analysis

Data from the interviews were transferred to special code sheets before they were entered into the computer for analysis (Appendix 4). In this process, checks and corrections were made of the responses to the questionnaires. Clinical examination data were entered from the special form (Appendix 1) and entered into the computer. Data-analysis was done by means of the Statistical Package for the Social Sciences (SPSS). Student's T-test was performed to measure differences in VPI and GBI scores and in knowledge scores from the first to the second examination, using the number of positive scores and number of correct answers respectively as the basis for the test.

5. RESULTS

5.1. Background Characteristics

The mean age of the study population was 15.2 years, with age ranging from 12 to 18 years. 90% were between 14 and 17 years.

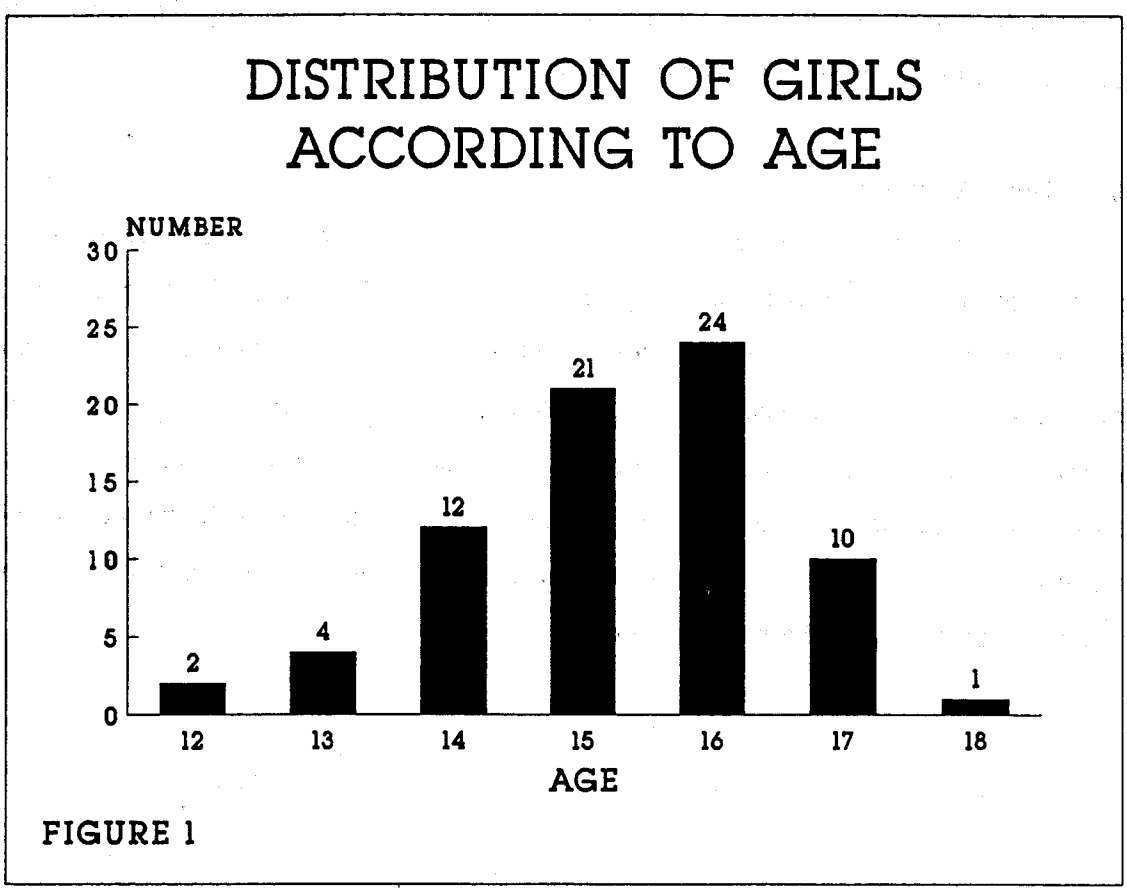


Figure 1. Age distribution of study population

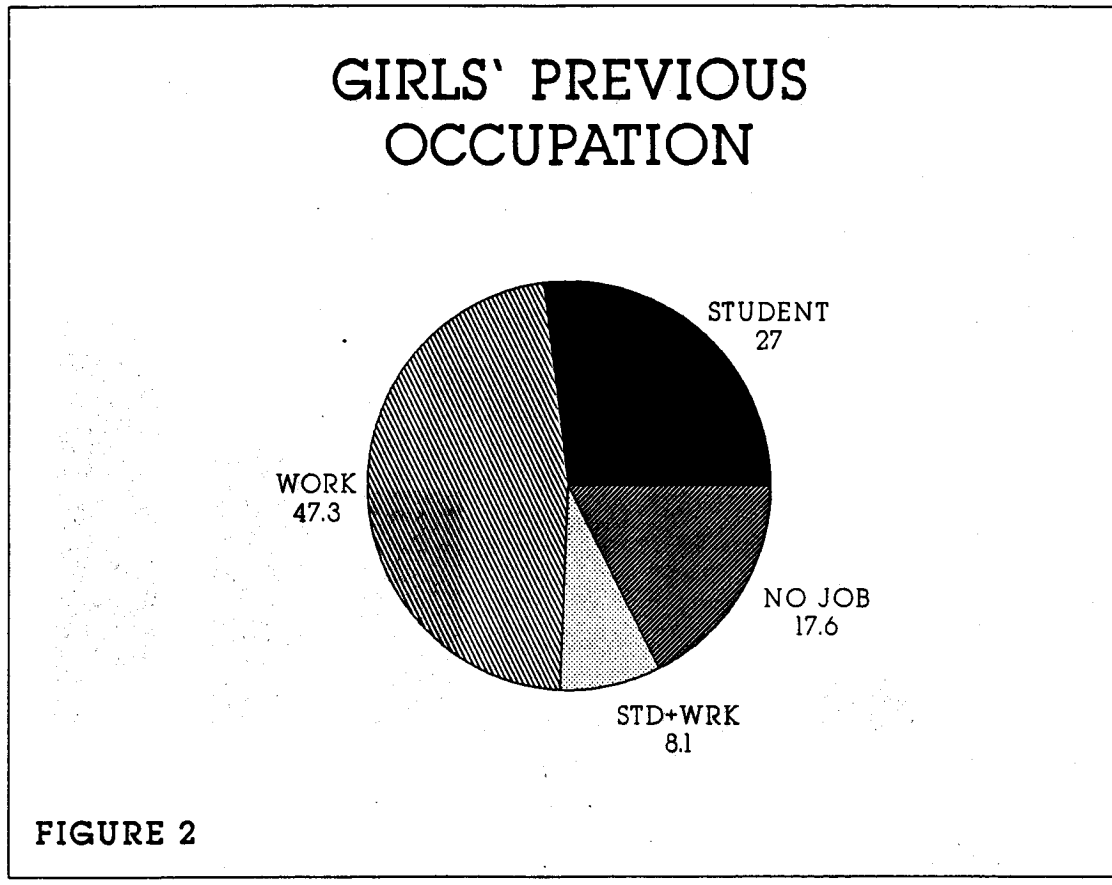


Figure 2. Percentage distribution of previous occupation of respondents

According to the above figure, 47.3% of girls had worked before they came to the Home. Only about 27% were students before entering the Girls' Home. About 8% were both working and studying and nearly 18% did neither before entering the Home. Together with the information on age it can be concluded that they stopped studying at a young age, having a rather low level of education.

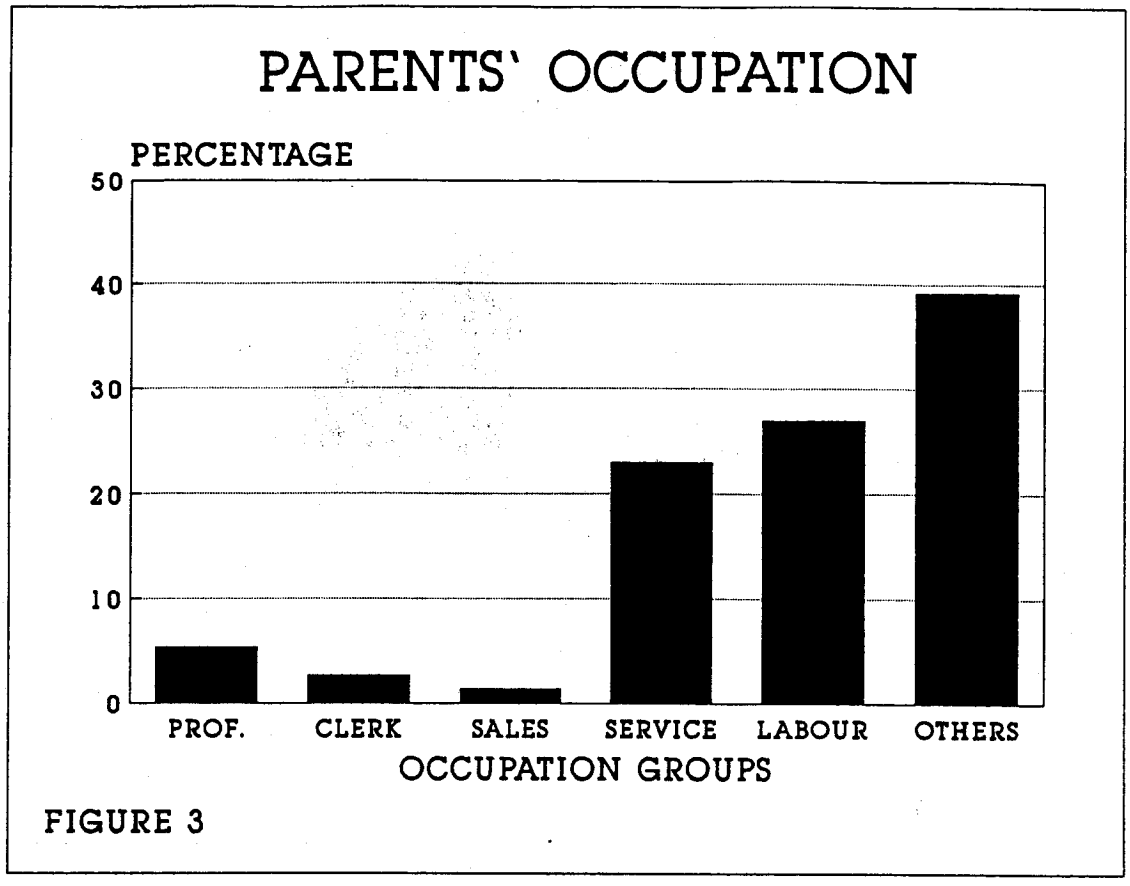


Figure 3. Percentage distribution of the father's occupation

Most of the girls' parents were employed in low class jobs such as sales and service persons, labourers. Thus, the majority of the study population came from a rather low social class.

5.2. Dental Behavior

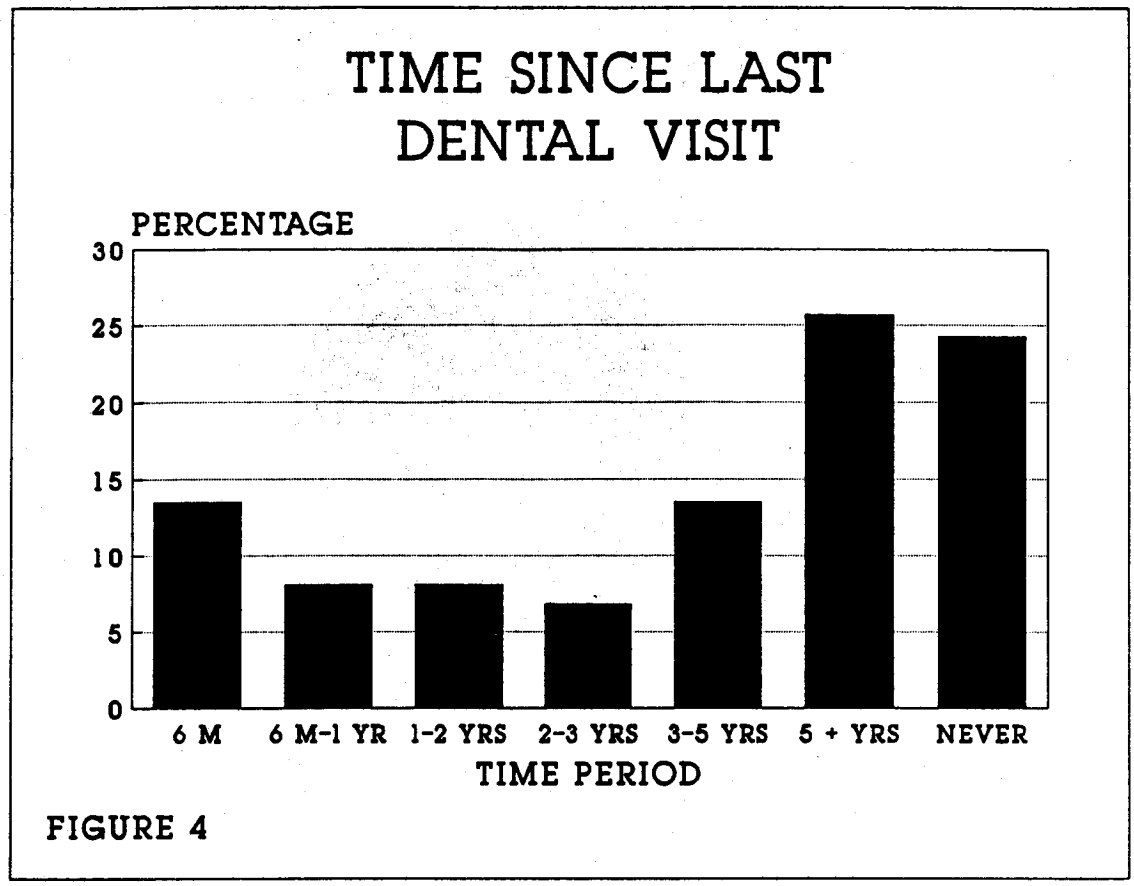


Figure 4. Time since the last dental visit

About 25% of girls had never seen a dentist before and another about 40% had their last dental appointment more than 3 years ago. The rest had their last dental care 6 months to 3 years ago. It clearly indicates that the great majority of girls did not have regular dental check-ups and they seek treatment only when problems arise, showing a rather low level of dental awareness.

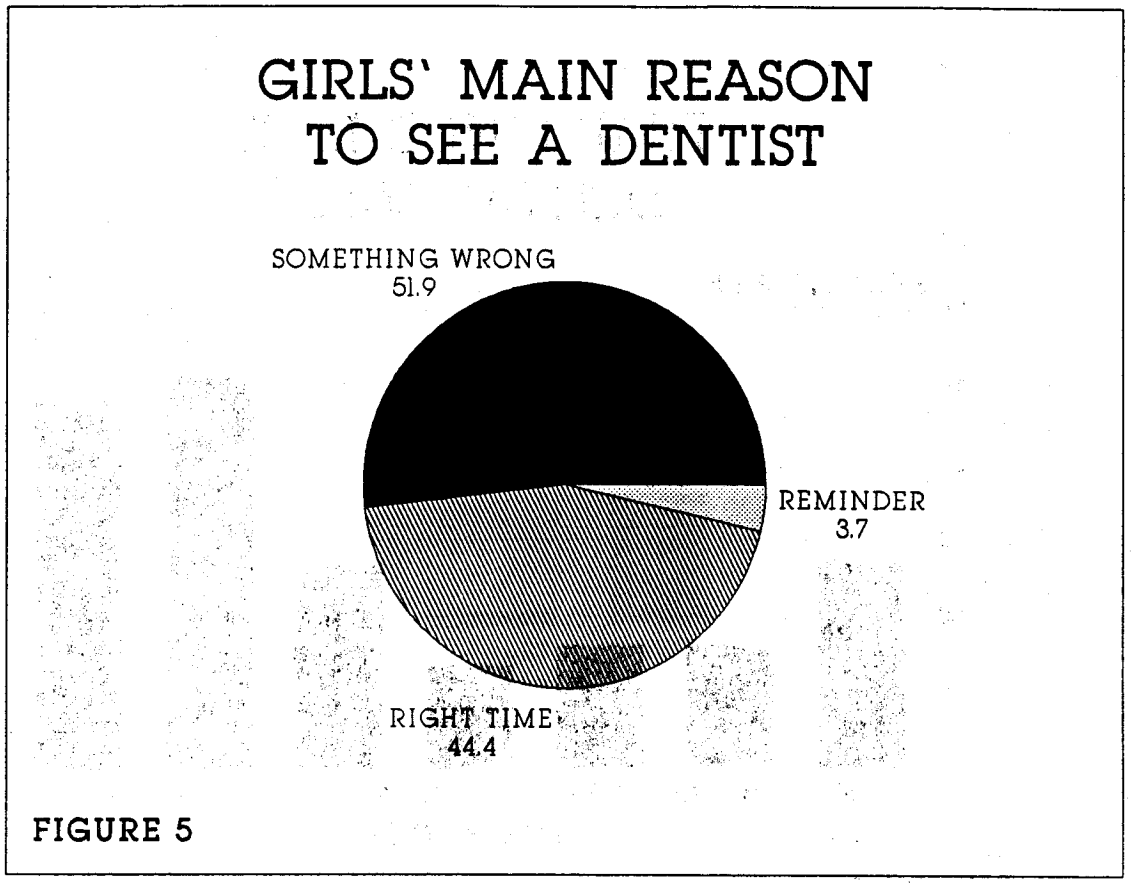


Figure 5. Main reason for the last dental appointment

This graph only considers those girls who reported a dental visit within the last three years. More than 50% thought that there was something wrong with their teeth and therefore they sought dental treatment. Approximately 45% thought that it was the right time to seek dental treatment. Only a few were reminded by their dentists for a recall appointment.

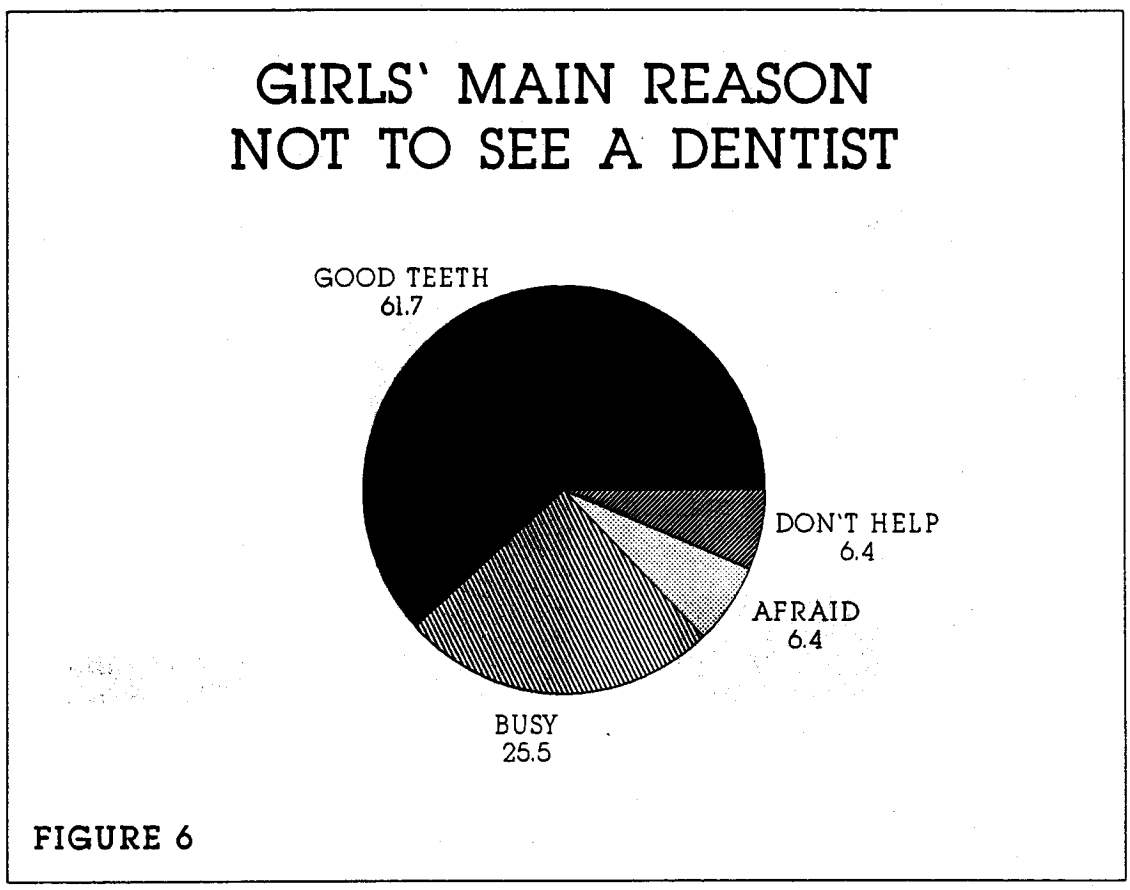


Figure 6. Main reason for not going to visit the dentist

This graph only considers those girls who reported no dental visits within the last three years.

About 60% of the girls believed that they had good teeth and therefore there was no need to see a dentist. About 25% claimed that they were too busy to have time to see a dentist. Nearly 7% were afraid of dentists and a few felt that dentists could not help to solve their dental problem. A very small number of girls had some other reasons for not seeing a dentist.

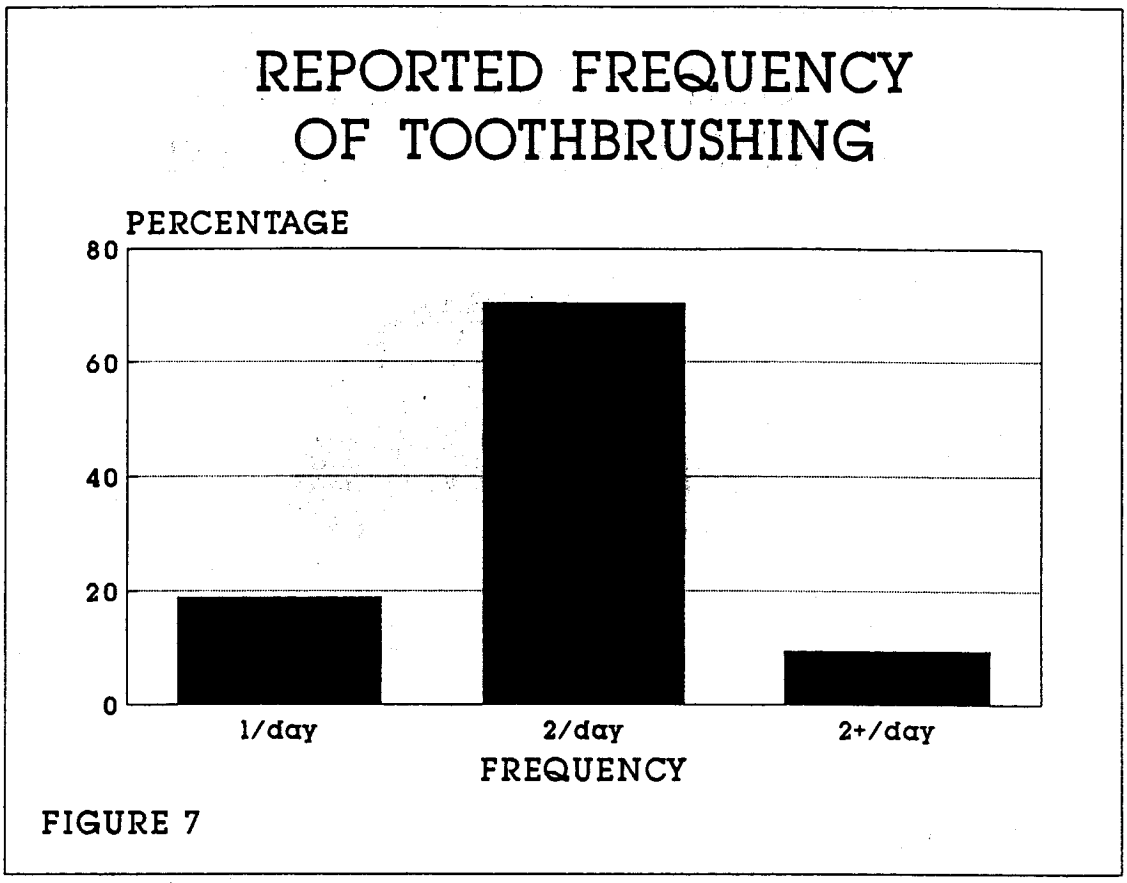


Figure 7. Reported frequency of toothbrushing

Regarding their toothbrushing habit, 70% of the girls reported to brush twice a day. About 20% brushed once daily and 10% brushed more than twice a day. No girl reported that she did not brush her teeth.

5.3. Dental Knowledge

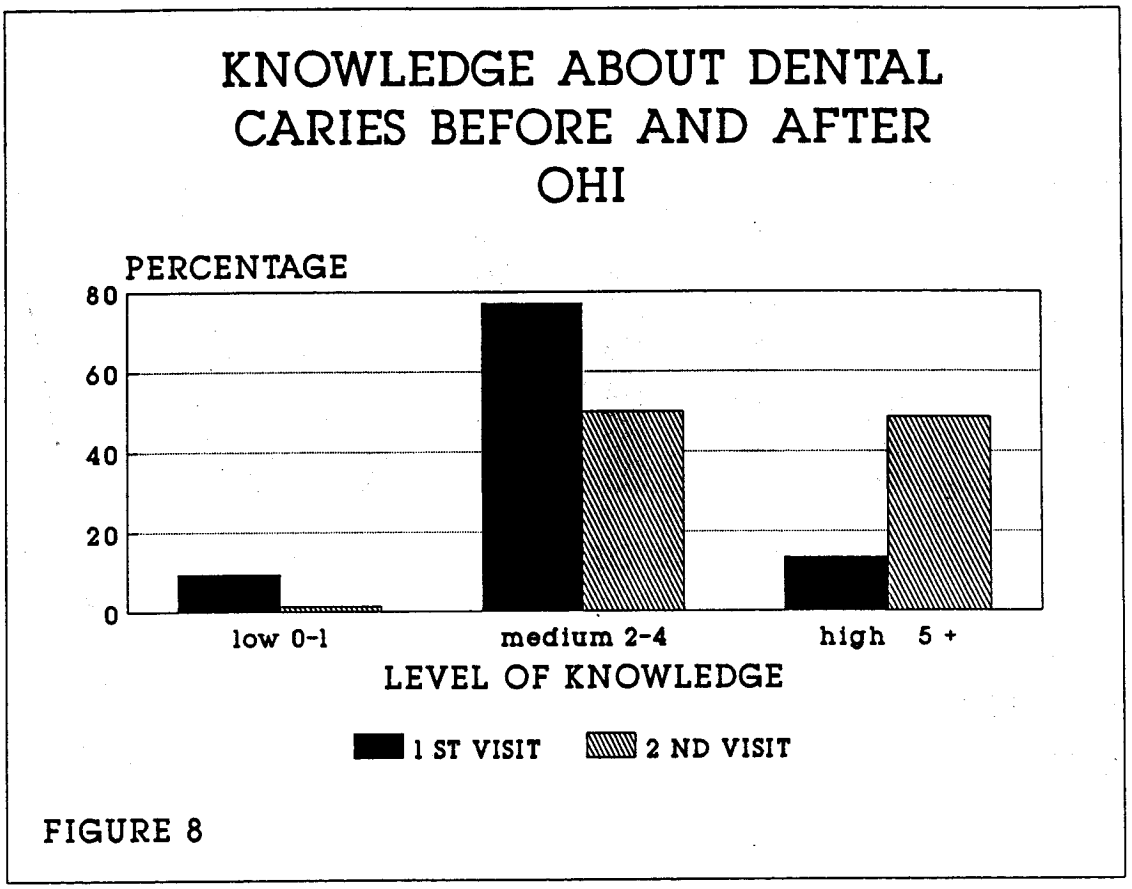


Figure 8. Level of knowledge on dental caries before and after the project

Dental knowledge was assessed before as well as after the OHI programme. A number of questions were asked about dental caries and periodontal disease respectively. Level of knowledge about dental caries was graded as low (0-1 correct answers), medium (2-4 correct answers), and high (5+ correct answers). Figure 8 indicates that, before the oral hygiene programme, most of the girls had medium level of knowledge about dental caries. However, after the oral hygiene programme, there was a tremendous increase in the percentage of girls with high level of knowledge and a decrease in the number of girls with low or medium level of knowledge.

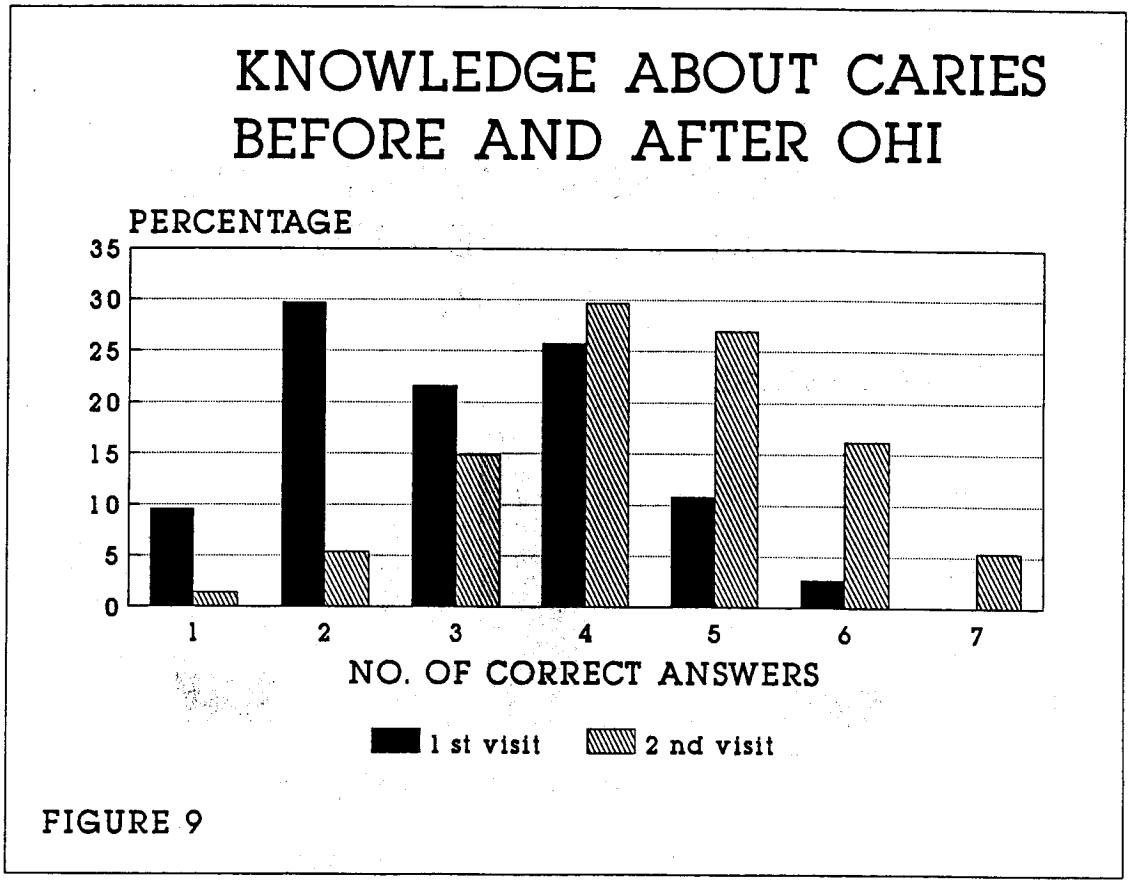


Figure 9. Dental knowledge on individual questions concerning caries at the two visits

Before and after the dental health education programme, the peak of the frequency of correct answers shifted from 2 to 4. More than 57% of the girls could give 4-5 correct answers during the 2nd visit and over 5% of the girls answered all 7 questions correctly which nobody were able to during the first visit.

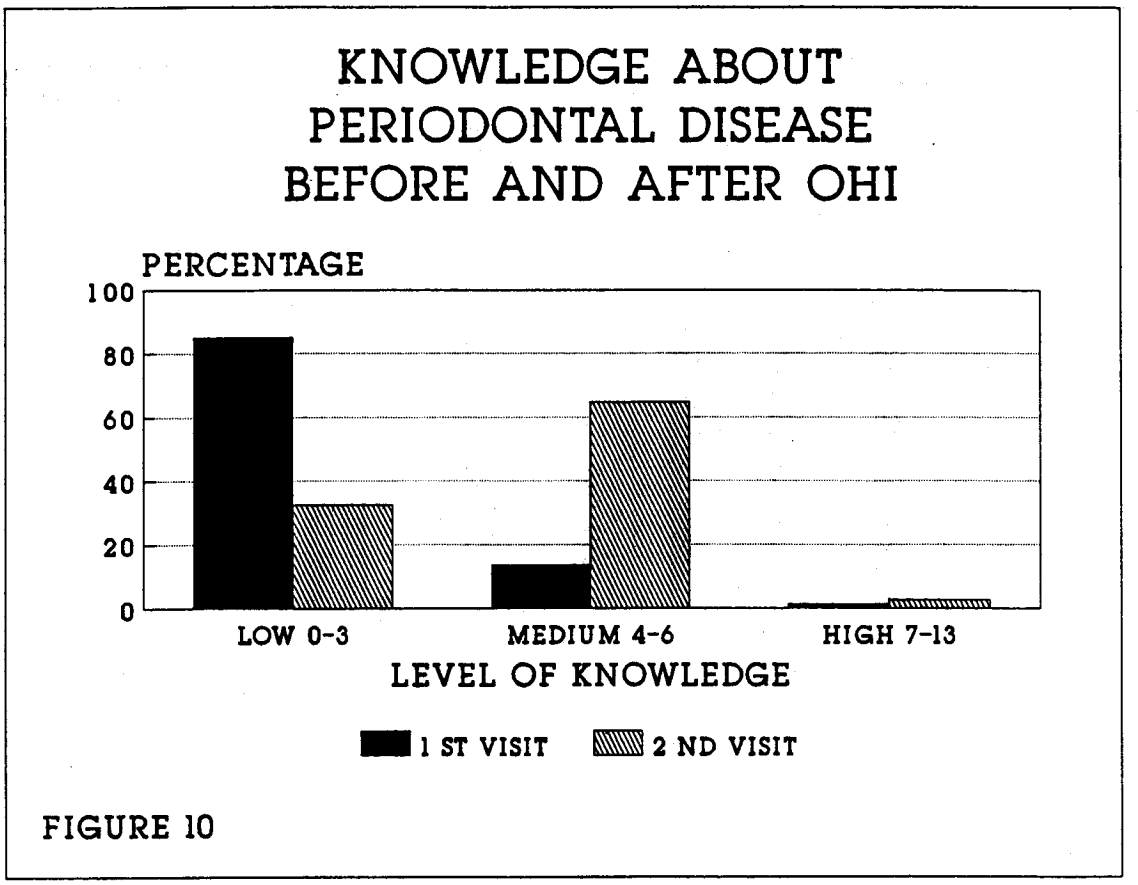


Figure 10. Dental knowledge concerning periodontal disease at the two visits

The knowledge concerning periodontal disease was graded as low, moderate, and high according to the number of correct answers gained, ie. 0-3 correct answers was graded as low knowledge, 4-6 as moderate knowledge and 7-13 as high knowledge. In the 1st visit, 85.2% of the girls had low knowledge. After the dental health education programme, 64.9% of the girls had moderate knowledge about periodontal disease compared with about 17% at the first visit. No obvious changes were noted in the high knowledge group.

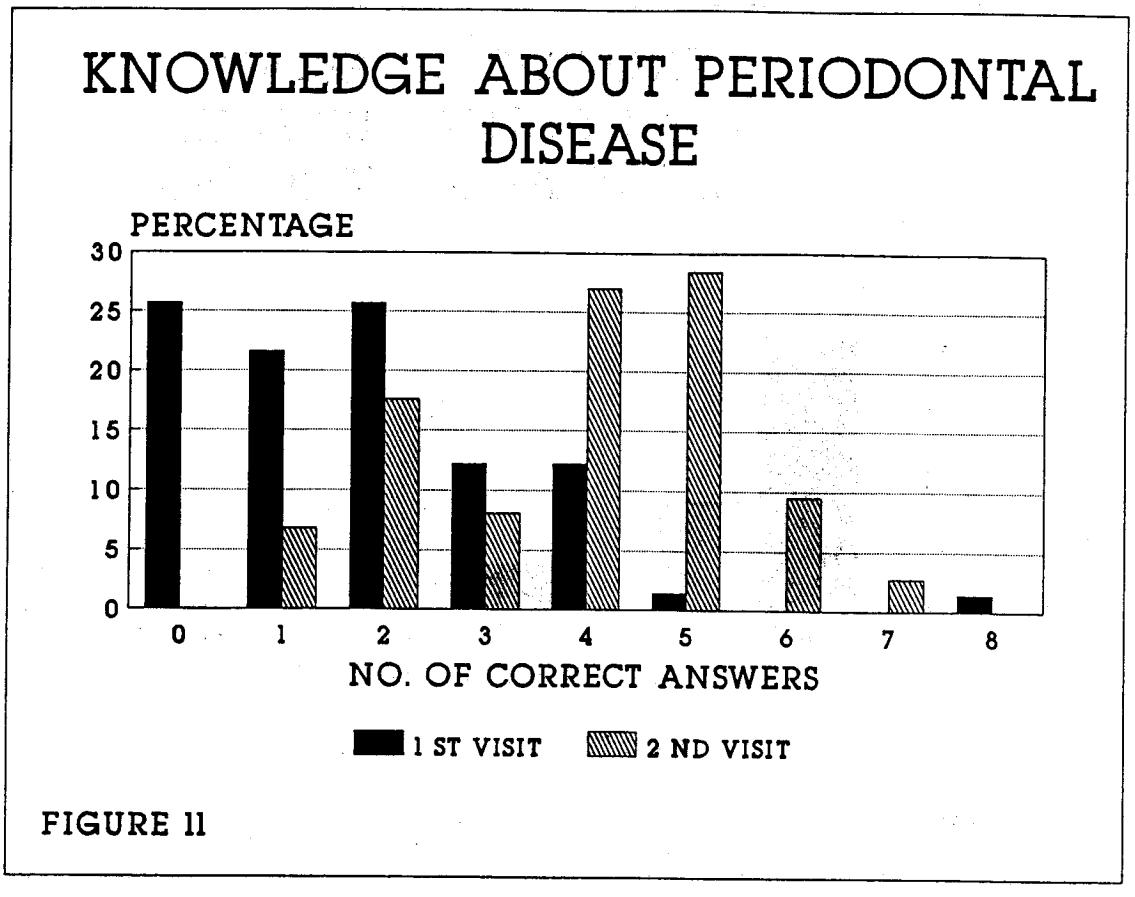


Figure 11. Dental knowledge on individual questions concerning periodontal disease at the two visits

There was a general increase in knowledge among the girls concerning periodontal disease.

Before the dental health education programme, more than 45% of the girls could only answer 1-2 correct answers and more than 25% of them knew nothing about periodontal disease. However, after the education programme, more than 55% of them got 4-5 correct answers.

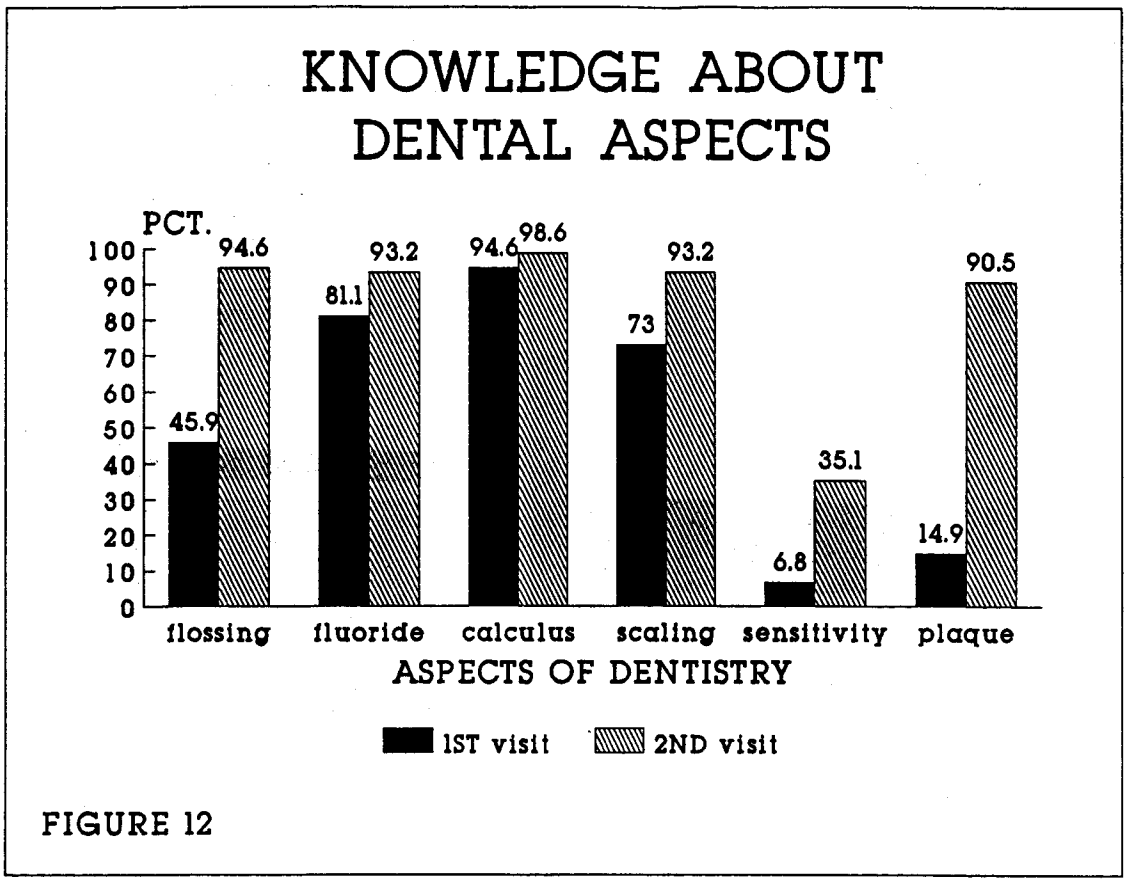


Figure 12. Dental knowledge concerning flossing, fluoride, calculus, scaling, sensitivity and plaque at the two visits

Six questions were asked concerning dental knowledge on the above different aspects and each question was graded on its own according to the relative frequency of correct answers. The knowledge on all aspects improved with the knowledge concerning flossing, sensitivity, and plaque showing tremendous improvements.

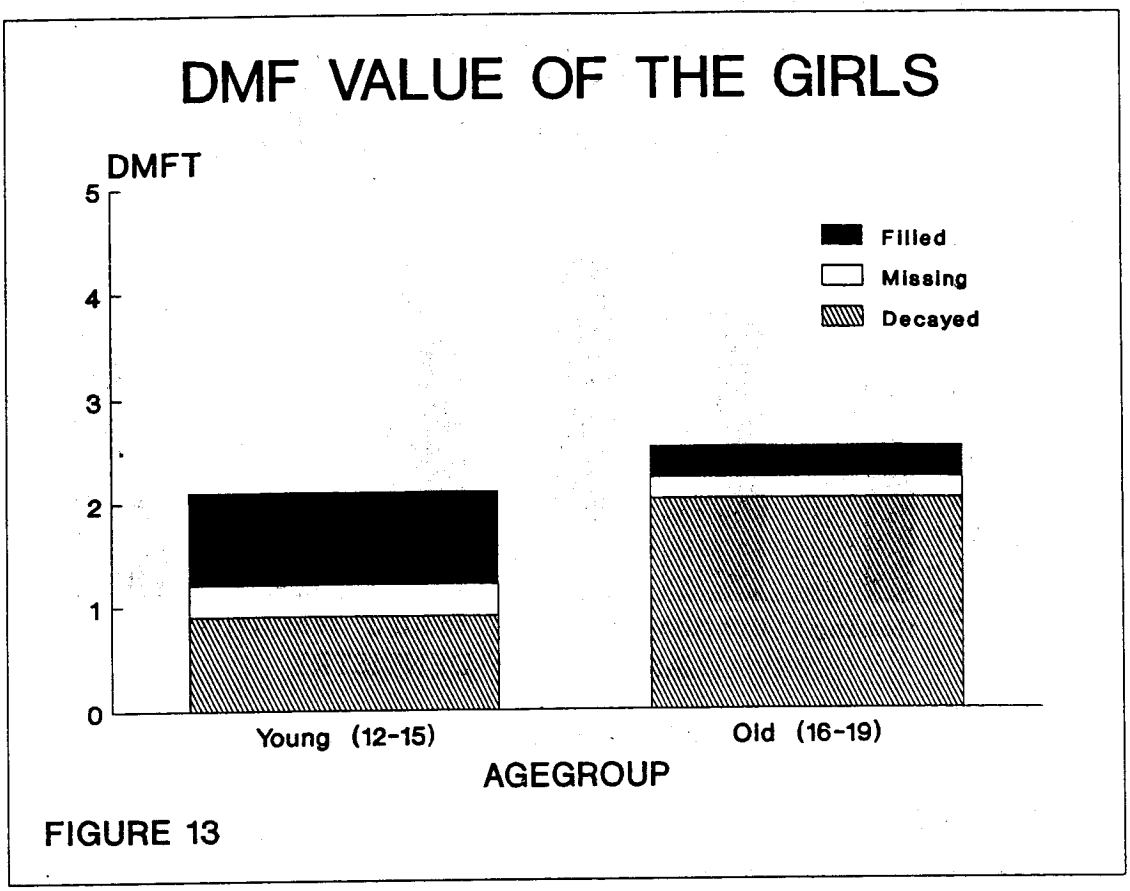


Figure 13. Dental caries experience according to agegroup

5.4. Dental Health

The dental caries experience was found to be about 2 Decayed, Missing and Filled Teeth in the youngest age groups and about 2.5 DMFT in the oldest girls. A much higher proportion of untreated decay was found in the oldest girls, whereas equal proportions of decayed and filled teeth was found in the young girls.

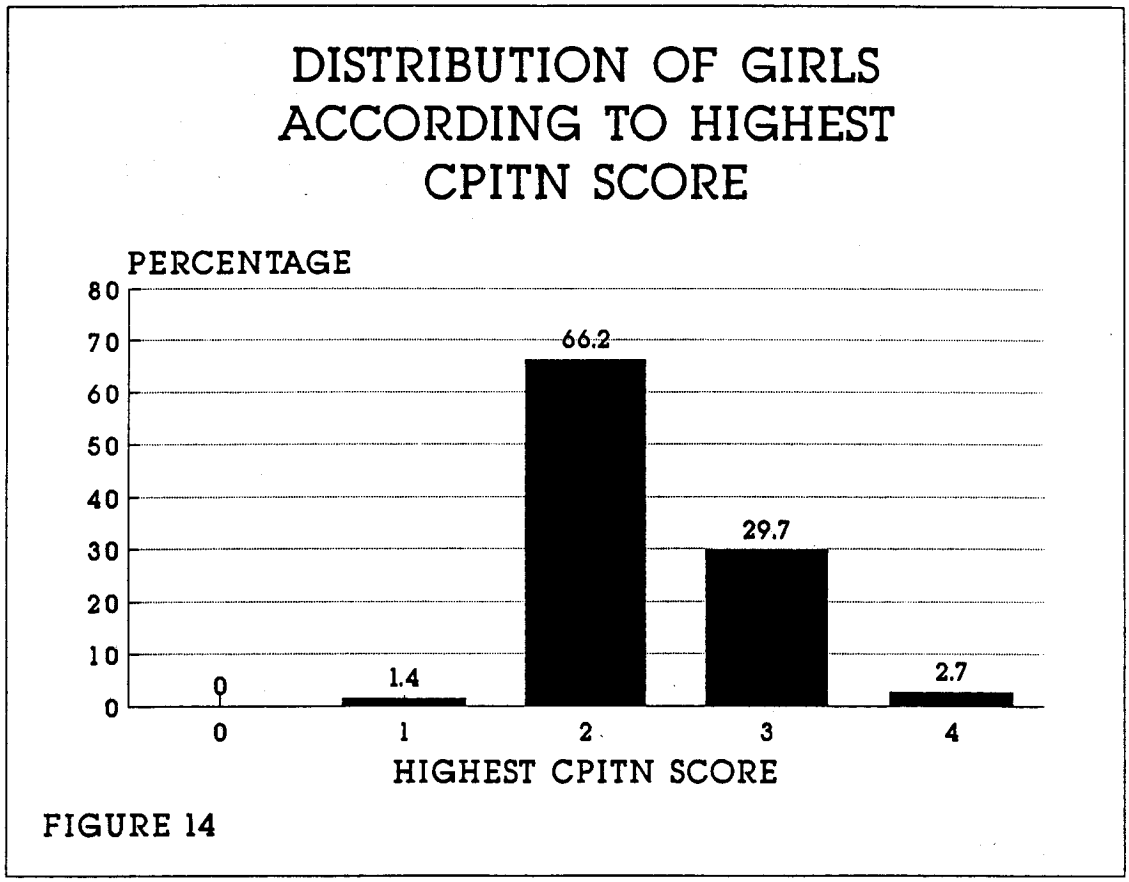


Figure 14. CPITN score. Frequency distribution.

Two thirds (66.2%) of the girls had CPITN score 2 as their highest score, whereas almost one third (29.7%) had CPITN score 3 as the highest score. This was quite similar to the CPITN distribution of the same age group of the Hong Kong Survey. Thus, the 15-19 year olds in that survey were distributed as follows: CPITN score 0 : 2%; score 1 : 2%; score 2 : 70%; score 3 : 26%; and score 4 : 1%.

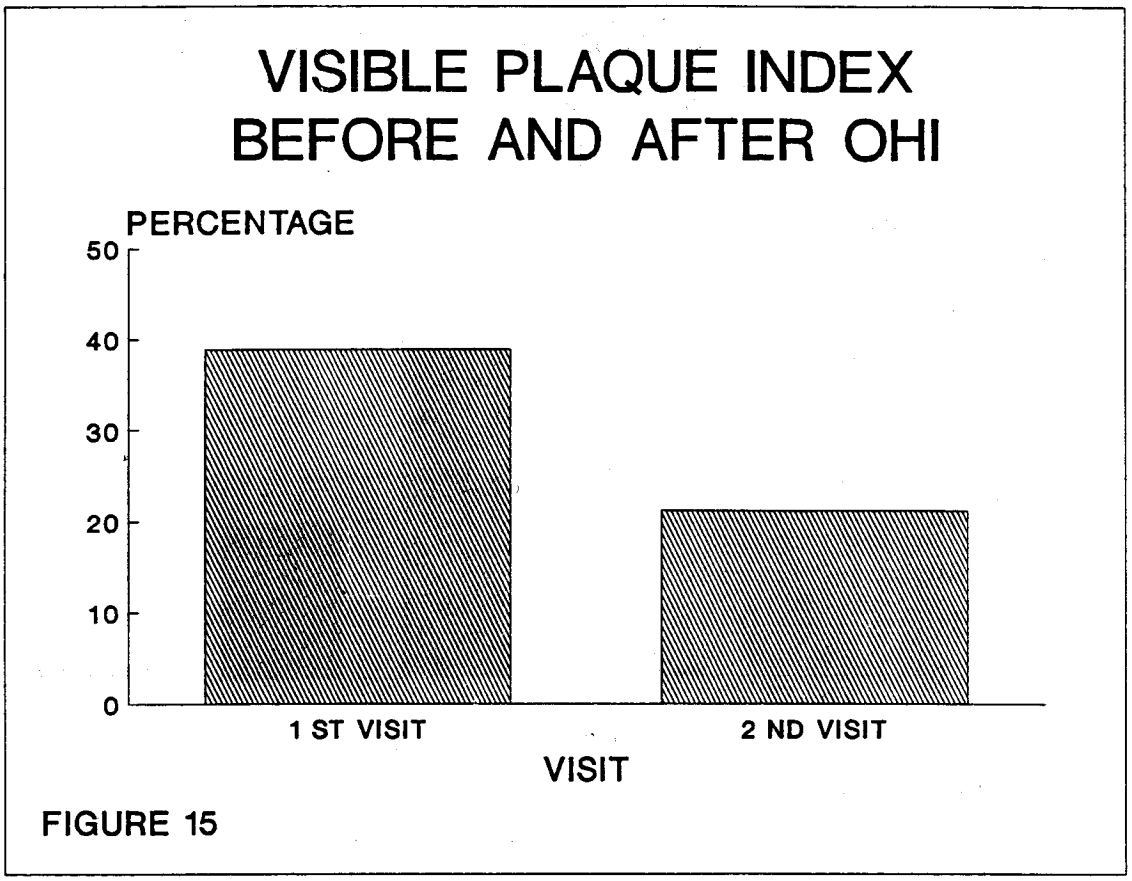


Figure 15. Visible plaque index (Ainamo and Bay 1975) at the two visits

The visible plaque index is presented as the percentage of sites with positive scores in the examined subjects. The percentage dropped from 38.9 to 21.2 from the first visit to the second visit which was statistically significant.

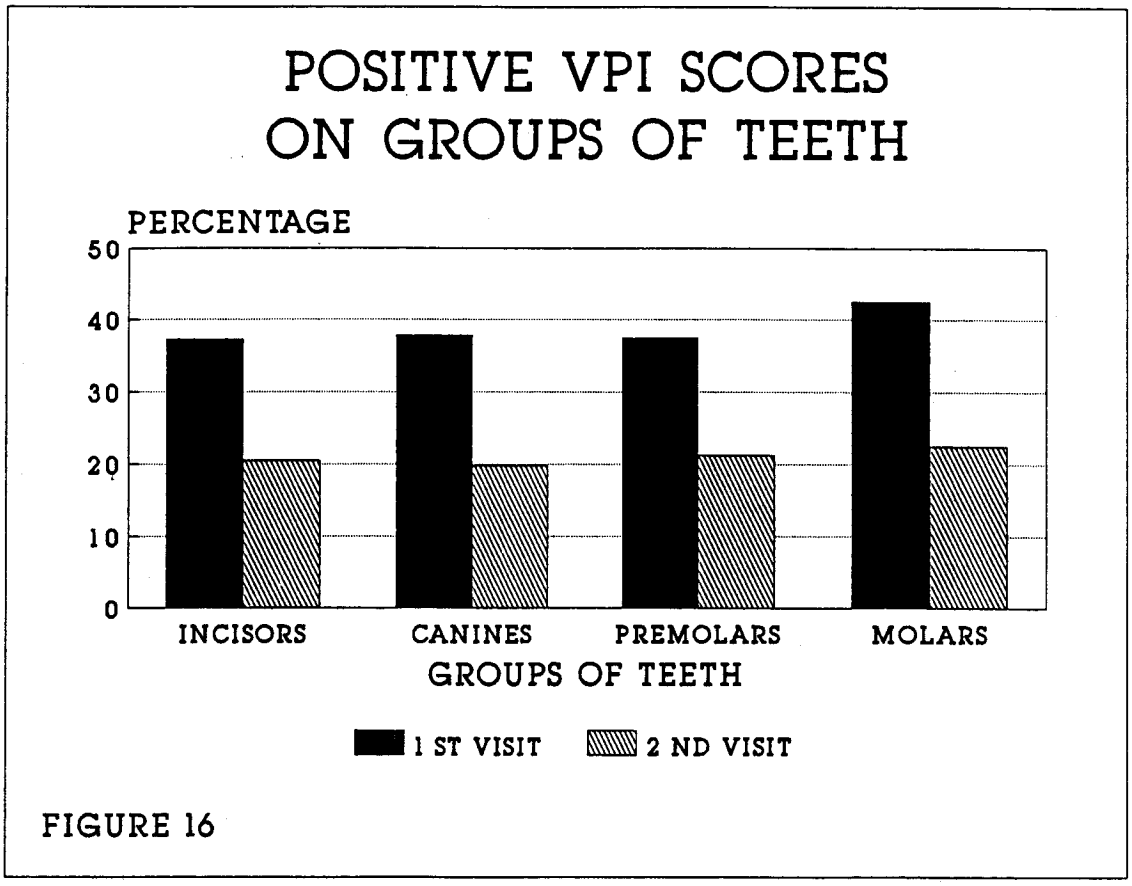


Figure 16. Visible plaque index (Ainamo and Bay 1975) for groups of teeth at the two visits

As seen in this figure VPI scores were very similar for all groups of teeth. At the first visit about 40% of the sites on all teeth were positive. All groups of teeth had a statistically significant decrease in visible plaque at the second visit with the molar teeth showing a greater decrease in the index.

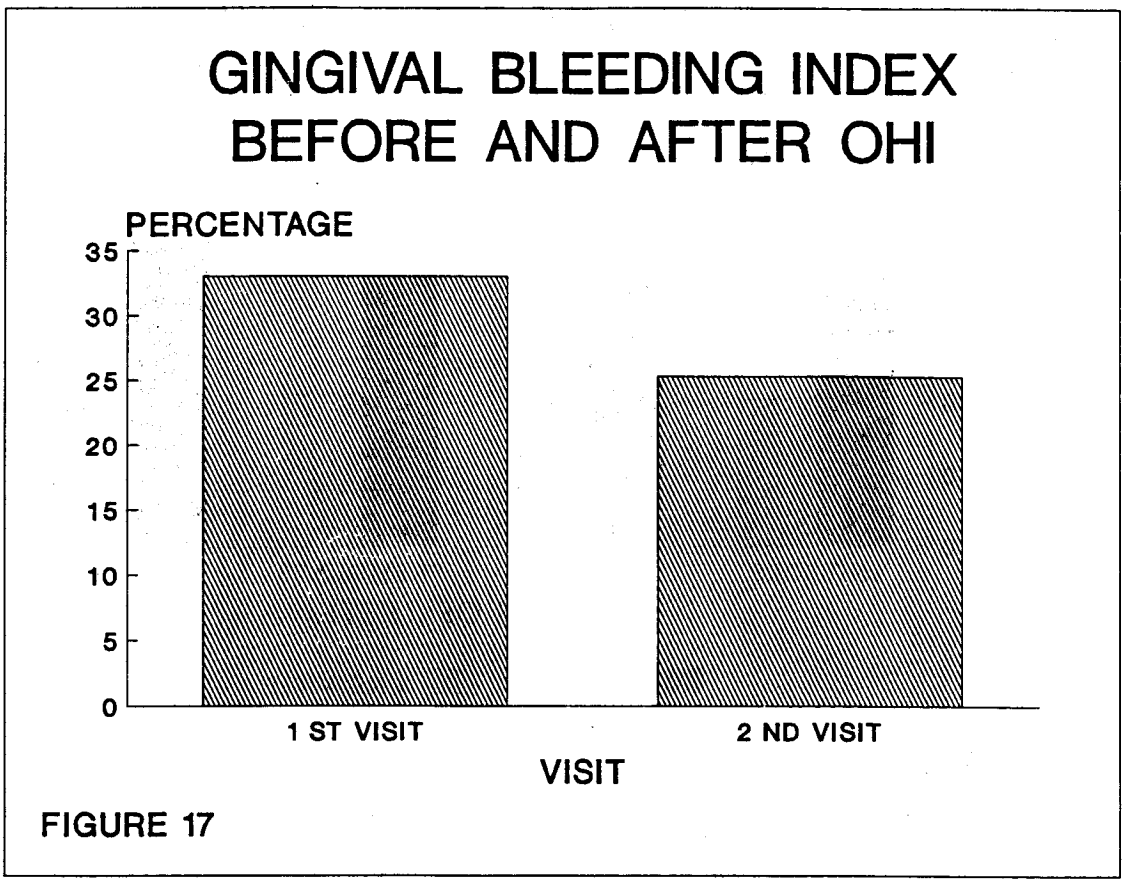


Figure 17. Gingival bleeding index (Ainamo and Bay) at the two visits

The gingival bleeding index dropped from 33% positive sites in the first visit to 25.3% in the second visit, which was found to be statistically significant.

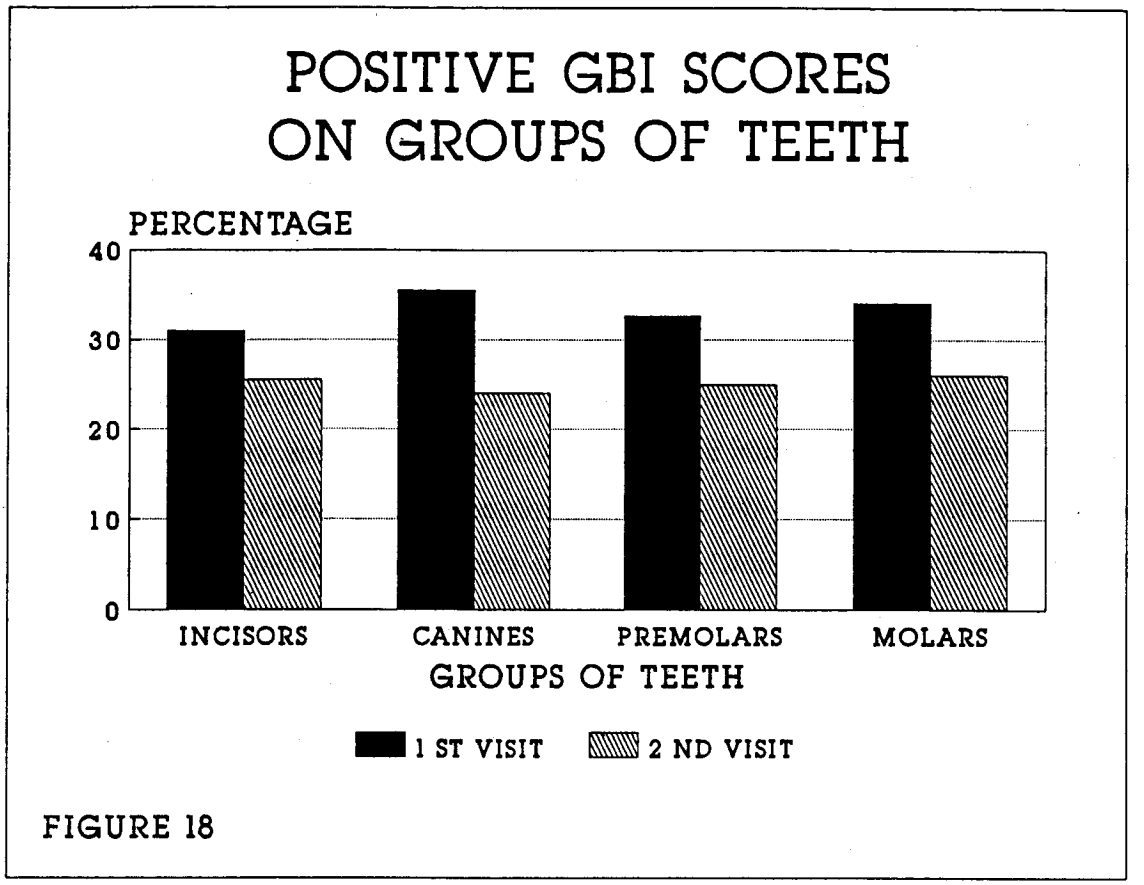


Figure 18. Gingival bleeding index (Ainamo and Bay) at the two visits

When looking at gingival bleeding in groups of teeth no differences could be found although somewhat more positive scores around canines were seen at the first visit.

Additionally, we analyzed changes in the VPI and GBI scores from first to second visit in relation to the girls' age, their occupation, and their dental visit pattern. However, no differences in improvement according to these variables could be found.

6. DISCUSSION

6.1. Materials and Method

The choice of the Girls' Home as our study population was based on several factors. First, these girls form a special target group. They mainly come from lower social class as seen from their parental occupation, and they themselves left school early. One of the reasons for their stay in the Home could be seen as an indication of poor family relations where support and guidance in for instance health matters could be lacking. Second, these girls lead a specially arranged life according to time tables set by the Girls' Home and share the same diet. Resocialization is of high priority, i.e. the Home strives to instill knowledge as well as moral value in the girls, both concerning themselves and the society. In this respect, oral hygiene and knowledge could be seen as an important aspect as part of general hygiene. These girls as other girls in normal schools could be seen as future mothers and therefore we hoped that through the dental education programme their future family could also be benefited. The girls from the long term section are all Hong Kong residents and they would usually stay in the Girls' Home from 6 to 12 months. This allowed for evaluation of the project without losing many of the participants.

The gingival bleeding index (GBI) and visible plaque index (VPI) were employed as advocated by Ainamo and Bay (1975) to assess the oral hygiene and gingival status of the girls. As stated in the general requirements of periodontal indices for prevalence studies and clinical trials by Davies[4], the criteria should be readily explainable and understandable. The quantitative determination should also be as simple and clear as possible. The traditional gingival index and plaque index as originally advocated by Löe and Silness have their merits. However, these indices require close supervision and careful calibration and when used in unskilful hands would undoubtedly reduce reliability and accuracy. Moreover the mean individual scores thus obtained are mathematically poorly justified as the biological 'distance' between, for example, Score 0 and 1 by no means correspond to the distance between Score 1 and 2[1]. Ultimately the oral hygiene has to be reinforced regardless of whatever scores obtained in order to achieve the principle of total plaque elimination.

With gingival bleeding index, only gentle probing by a blunt probe is administered, no unnecessary pain should be caused. If bleeding occurs within about 10s then a positive finding is recorded. The number of positive findings is then expressed as a percentage of the

number of gingival sites examined. The result should correspond to the amount of bleeding provoked by thorough cleaning of the teeth by the patient[1].

In the visible plaque index, the occurrence of clearly visible plaque on the mesial, buccal and lingual surfaces of all the teeth in the right quadrants of the mouth, was recommended to be recorded. The plaque to be scored should be visible beyond doubt to all members in a group of examiners and preferably also to the examined patient.

In order to be able to conduct a preventive programme, a simple and well defined recording system for oral hygiene and gingival status should be employed. Such a system should be as easy and natural to use as the DMFT index. The quantitative findings give quantitative severity score with site specificity. Moreover they statistically correlate to Löe's traditional method as has been shown in previous studies. Hence, these indices are especially suitable for short term survey.

The total numbers of girls who were able to participate in the pre- and post-dental education programme's clinical examination were 74. There was a loss of 16% which was due to normal turn-over within the Girls' Home.

The aims of the questionnaire were set in such a way that the girls' personal data and social background could be accurately recorded and their attitude towards dental hygiene and knowledge be assessed. The dental knowledge part was repeated in the post-education interview so that their improvement of dental knowledge could be assessed. The result showed that more than half of the girls had not had a dental check-up for more than 3 years reflecting a weak dental awareness. The main reason for dental visit was pain which fits the majority of Hong Kong people who only seek dental treatment when they have dental problems[5]. Although the brushing frequency of most girls were twice daily the gingival and plaque status were unsatisfactory. This indicated that technique of brushing is more important than frequency. Although most girls had come across such terms as 'plaque', 'calculus', 'fluoride' and 'scaling' before the education programme, the questionnaire showed that the girls generally had limited knowledge about periodontal diseases and caries. They had no idea how periodontal disease and caries came about and the eventual results of ignorance. Most girls claimed that they heard of the term plaque, fluoride and calculus from mass media especially in T.V. advertisements.

There was a significant improvement of knowledge about plaque, sensitivity, and flossing. There also was satisfactory improvement in knowledge about the causes and possible consequences of periodontal disease and caries. The real function of scaling was also properly conveyed to the girls.

6.2. Clinical Examination Result

Both VPI and GBI were higher in the lower arch and in the molar region. Statistically significant improvements were observed in both VPI and GBI in the re-evaluation phase of the project. There was a general reduction in plaque levels on all regions of teeth and the reduced GBI reflects a close relation between plaque and gingival inflammation although the reduction was not as great as in VPI. This could be explained by the fact that inflammation heals over a longer time or that the girls brushed their teeth seriously once they realized the date of the re-evaluation clinical examination. Therefore long term review and continued reinforcement is desired and an even higher improvement might be expected.

When comparing the CPITN with Hong Kong Data, the pattern and distribution are more or less the same and the treatment need for these girls are mainly OHI and scaling. The DMFT average values are close to Hong Kong data values. However, the DMFT of the older age group was obviously greater than the younger group which may be explained by the longer exposure of teeth to environment in the older age group. The number of untreated decayed teeth was rather great which may be due to lack of dental service in the Girls' Home. Moreover the decayed teeth values in the older age group was greater than in the younger age group and conversely, the filled teeth in the young group was greater than in the older age group. This may possibly relate to the restorative oriented school dental service programme in which the younger girls had participated prior to coming to the Home.

Although providing scaling treatment was one of the original objectives in our Public Health project, there were several reasons for amending our plan to a certain extent.

1. Most of the girls, if not all, were afraid of bleeding and pain during treatment. Even in the 1st clinical examination, some were quite nervous.

2. After 1st clinical examination, we found that about half of the girls in the Home presented with gross supra and subgingival calculus deposits. If all of them should have scaling treatment - considering the availability of equipment, instrument and manpower in the Girls' Home - we could hardly deal with all of them.

3. Recent studies show that significant improvements in periodontal health can be achieved through oral hygiene alone in the absence of scaling[4].

4. As claimed by the staff in the Girls' Home, it was not easy to arrange for so many girls to go to Prince Philip Dental Hospital for treatment within one visit.

So under these considerations, we invited 8 of the girls with the greatest need to Prince Philip Dental Hospital to have scaling treatment for their own benefit.

6.3. Behaviourial Change

The oral health education programme was conducted by means of board show, slide show, small group tutorial, and the information conveyed to them was reinforced through their active participation in the quiz competition and the slogan and poster design. Through these activities opportunity for active participation was provided. We perceived some enthusiastic learning attitudes in the girls. Their creativity was also impressive in the slogan and poster design. Besides the fact that the competitions in the quiz and in the slogan and poster design provided positive incentives to learn, the actual performance of the girls in the small tutorials also in general showed their eager way of learning and active participation in raising questions and demonstrating correct toothbrushing technique. However, unavoidably there was a small number of girls who were more passive during these activities.

A traditional teaching scheme may be boring to most girls and the introduction of quiz, slogan and poster competition proved to be interesting for the girls. This method of delivering dental information is especially effective for a group who is still in the active learning period and fond of extra-curricular activity. The immediate request for toothpaste and floss after the demonstration and the significant reduction of VPI proved the programme effective and interesting.

6.4. General

1. The improvement in dental knowledge, as evidenced in the post-evaluation questionnaire survey and in practises in tooth cleaning technique are considered the foundation for the improvement in the clinical examination result as shown in the decrease in GBI and VPI.

2. Besides correct manual technique of using tooth-cleaning device, dental knowledge is also important in contributing to encourage to a good oral hygiene practice.

3. Although the educational background and ages of the group varied, the same approach of oral health education was adopted to all. There was a general improvement in overall performance. Thus, the effectiveness of the programme may be attributed to the approach adopted as being appropriate.

6.5. Problems Encountered

1. Difficult to design an appropriate programme suitable for all girls because of the moderately wide age range and the difference in educational level.

2. Behaviour response showed some unenthusiastic and mildly un-cooperative:
   - some were not very willing to answer the questionnaire;
   - some tried to give the wrong answers and regarded it as funny;
   - some did not pay much attention in listening to the messages that were conveyed;
   - a few of the girls were emotionally unstable.

3. Communication problems due to the different background of the girls and us, but it was helped by
   - close contact with the Girls' Home before the start of the programme, through which a more detailed understanding of the girls' behaviour was obtained;
   - the staff of the Girls' Home, who helped to keep order;
   - the briefing given to the girls before the programme;
   - small group discussion;
   - reward given in the competition.

4. No dental floss was allowed to be distributed to the girls, for safety reasons.

7. CONCLUSIONS

1. The average DMFT values of the study group were similar to those of children in Hong Kong. However, the F component of DMFT was higher in the younger age group while the D component was higher in the older.

2. Upon the delivery of dental health education, the dental knowledge of the study group were improved and clinically, there was improvement in oral hygiene and gingival status.

3. The distribution of CPITN scores in the study population was similar to that found in the H.K. Survey for 15-19 year olds, with 66.2% of girls having CPITN of 2, 29.7% of CPITN 3 and 2.7% having a CPITN of 4. A large treatment need exists in terms of OHI and scaling, but the available dental services provided are not enough.

4. It is feasible to conduct an effective oral health education in a girls' home, provided the appropriate approach is adopted. Subsequently, the dental knowledge of the girls can be improved as is evident in this evaluation.

8. RECOMMENDATIONS

1. Regular dental check-ups are recommended as a basic dental health service for the girls in the Ma Tau Wei Girls' Home, not only limited to emergency basis treatments.

2. Oral health education can be carried out with periodic intervals by dental teams to deliver information and oral hygiene technique for the benefits of future girls' home's residents.

3. A programme design based on active participation is an effective method of learning for the girls.

4. Active girls can be appointed as leaders or group tutors in order to help those girls who are passive. Both parties should then benefit.

9. ACKNOWLEDGEMENTS

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   Dr. E.S.H. Ng
   Dr. L.P. Lim
   Miss P. Dando
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   Miss Irene Tang, Staff Hygienist
   DSAs of the Department of Periodontology and Public Health
6. Miss Josephine Yuen, Secretary of the Department of Periodontology and Public Health
7. Dental Illustration Unit, Faculty of Dentistry, University of Hong Kong
8. Primary Care Unit, Faculty of Dentistry, University of Hong Kong

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The following two previous community health projects served as inspiration in our planning of the project:

Dental Health in St. Christopher's Home
Dental Health in the Po Leung Kuk Children's Home

11. APPENDICES

Appendix 1 Clinical examination form

2 Clinical examination criteria

3 Questionnaire

A. English version

B. Chinese version

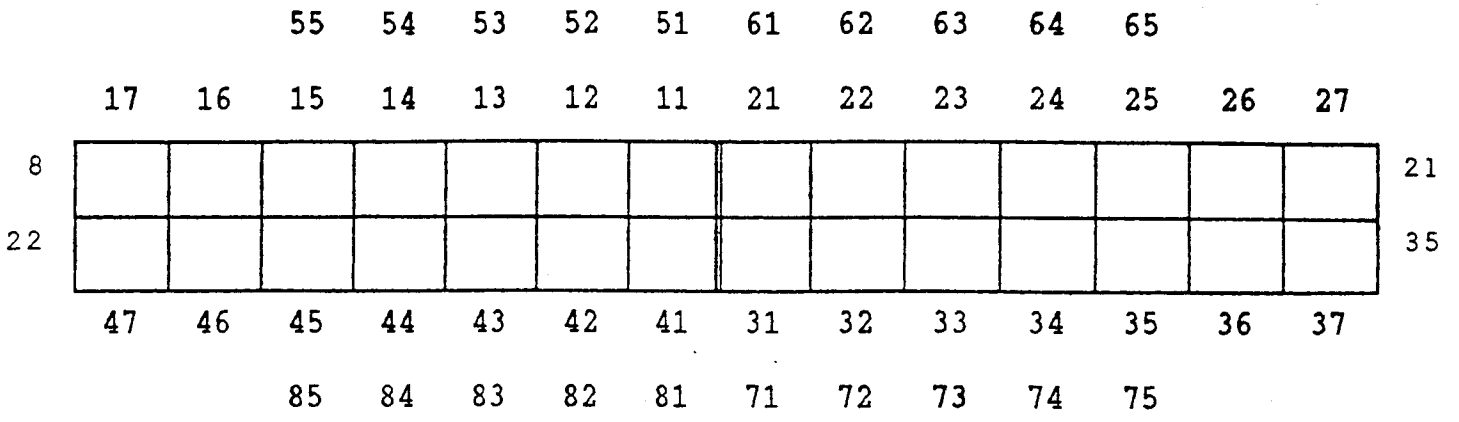
4 Questionnaire coding sheet

Date _____ Examiner _____ Original/Duplicate

GENERAL INFORMATION

No.: _____ (1-4) Age: _____ (5-6)

DENTITION STATUS



VISIBLE PLAQUE INDEX

17 16 15 14 13 12 11

FAC.
MES.
LING.

37 - 57

1 - 21

FAC.
MES.
LING.

47 46 45 44 43 42 41

1
75

GINGIVAL BLEEDING INDEX

17 16 15 14 13 12 11

FAC.
MES.
LING.

23 - 43

45 - 65

FAC.
MES.
LING.

47 46 45 44 43 42 41

PERIODONTAL STATUS (CPITN)

16 11 26

67	68	69
70	71	72

46 31 36

2
75

VISIBLE PLAQUE INDEX

0 = no visible plaque

1 = visible plaque present

GINGIVAL BLEEDING INDEX

0 = no bleeding on probing

1 = bleeding on probing

PERIODONTAL STATUS (CPITN)

0 = healthy

1 = bleeding

2 = calculus

3 = pocket 4 - 5 mm

4 = pocket 6 mm or more

x = excluded sextant

DENTITION STATUS

Permanent teeth	Primary teeth
0 = sound	A
1 = decayed	B
2 = filled and decayed	C
3 = filled, no decay	D
4 = missing due caries	E
5 = missing any other reason	-
6 = sealant, varnish	F
7 = bridge abutment or special crown	G
8 = unerupted tooth	-
9 = excluded tooth	-

DENTAL PUBLIC HEALTH PROJECT

Group 4.3/89-90

Questionnaire

_____

Code Number

A. Personal Data

1. Age (in years) _____

2. Had you ever been in this type of institution

   Yes 1
   No 2

3. Duration of institutionalization _____ No. of months

4. How long has the girl stayed in the institution _____ No. of months

5. Occupation of parents

   [Unemployed/retired: What was your last occupation]

   Professional, administrator, manager 1
   Clerical and related worker 2
   Sales worker 3
   Service worker 4
   Production and related worker, driver, labourer 5
   Housewife 6
   Others, specify 7

6. No. of siblings _____

7. Duration of residence in H.K. _____ No. of years

8. Occupation of girl previously

   Student 1
   Work 2
   Work + student 3
   No job 4

B. Dental Experience

9. How long ago did you last receive dental care?

Less than six months	1	Go to 9
Six months to one year	2	
One to two years	3	
Two to three years	4	
Three to five years	5	
More than five years	6	
Never received dental care	7	

10. What was the <u>main</u> reason you did not visit a dentist in the last three years?

Afraid or don't like dentist	1
Poor experiences with previous dental care	2
Too busy	3
My teeth are good, so it's unnecessary	4
Dental problems not serious enough	5
A dentist cannot help my dental problems	6
Other, specify _____	7

11. What was the <u>main</u> reason you made your last visit to a dentist?

Something was wrong	1
I thought it was time for an examination orcleaning	2
The dentist reminded me it was time for an examination or cleaning	3

12. At your most recent visit to the dentist, what treatment did you receive?

	Yes	No
An examination	1	2
Scaling	1	2
Fillings	1	2
Root canal work	1	2
Instruction in taking care of teeth and gums	1	2
X-rays	1	2
Tooth extraction	1	2
Bridge work	1	2
Periodontal/gum treatment	1	2
Other treatment, specify _____	1	2

13. How often do you brush your teeth?

Once a day	1
Twice a day	2
More than twice a day	3

14. Do you use toothpaste?

Yes	No
1	2

C. Existing Dental Status

15. Do you have any dental problem at the moment?

Yes 1
No 2
Don't know 3

		Yes	No
If yes, specify :	i) caries	1	2
	ii) bleeding gum/gum swelling/ mobile tooth	1	2
	iii) esthetic (malocclusion, discolouration etc.)	1	2
	iv) calculus	1	2

16. Are you under dental treatment?

Yes	No
1	2

If yes, specify _____

D. Dental Knowledge

17. Why do people get dental caries?

Worms 1
Frequent sweets intake 2
No toothbrushing 3
Not rinse 4
`Dirty' teeth 5
Deficiency in Vitamin 6
Bacteria 7
Don't know 8

18. What will caries do if we don't take action?

Lose tooth 1
Toothache 2
Abscess/infection 3
Bad breath 4
Don't know 5

19. How can caries be prevented?

Toothbrushing 1
Cutdown sugar intake 2
Dental check-up 3
Rinse more frequently 4
Don't know 5
Others _____ 6

20. Why do gums bleed?

CIPD 1
"Hotness" 2
Vitamin deficiency 3
Not brushing properly/seldom brushing 4
Calculus accumulation 5
Bacteria 6
Don't know 7

21. What are the signs and symptoms of periodontal disease?

Toothache	1
Swollen gum	2
Bleeding gum	3
Bad breath	4
Tooth loss/mobile	5
Calculus accumulation	6
Recession	7
Don't know	8

22. Why do people get periodontal disease?

Worms	1
Sweets	2
Not brushing	3
"Hotness"	4
Vitamin deficiency	5
Not brushing properly	6
Smoking	7
Bad breath	8
Don't know	9

23. How can gum disease be prevented?

Brush more frequently	1
Decrease sweets intake	2
Keep teeth clean	3
Eat more fruits	4
Rinse more frequently	5
Salty toothpaste	6
Scaling	7
Drinking water	8
Dental check up	9
Don't know	10

24. According to your opinion, what is the function of a toothbrush?

Normal life practice	1
Prevent caries	2
Prevent periodontal disease	3
Prevent bad breath	4
Prevent toothache	5
Remove calculus	6
Keep teeth clean	7
Don't know	8

25. Do you know what is dental floss?

Extraction	1
Cleansing	2
Don't know	3
Others _____	4

26. Have you ever heard of fluoride?

Yes	No
1	2

If yes, specify _____

27. Have you ever heard of calculus? Yes 1 No 2

If yes, specify _____

28. Do you know what is the function of scaling? Yes 1 No 2

If yes: a. remove calculus
b. Remove stain/keep teeth white
c. Decrease sensitivity
d. Others _____

29. Do you know why teeth become sensitive? Yes 1 No 2

If yes, specify _____

30. Have you ever heard about dental plaque? Yes 1 No 2

If yes, specify _____

89-90 牙齒公共衛生推廣計劃 43組

問卷調查

A. 個人資料

1. 年齡 ____歲
2. 以往有否入院記錄？ 有／無；若有，曾入院多久？ ____個月
3. 父母之職業

〔失業／退休＝父母以前曾任之職位〕

	父親	母親
專業人仕，如行政人員、經理 ---------1	____	____
文員或類似之文職 ----------2	____	____
售貨員 ----------3	____	____
服務行業，如侍應生、警察、小販 ------4	____	____
工人、司機、苦力 ----------5	____	____
家庭主婦 ----------6	____	____
其它（請註明）----------7	____	____

4. 兄弟姊妹之數目 ____
5. 在香港居住了多久 ____年
6. 入院前之職業 _____

B. 以往看牙醫之經驗

7. 最近一次看牙醫是幾時？

六個月內 ----------1
六個月至一年前 ----------2
一至兩年前 ----------3
兩至三年前 ----------4
三至五年前 ----------5
多於五年前 ----------6
從未看過牙醫 ----------7

（1–4 可繼續答第九題）

8. 你最近三年內沒有看牙醫的原因是什麼？

診金太貴 ----------1
不想花錢 ----------2
害怕牙醫／對牙醫反感 ----------3
曾有看牙醫之可怕經驗 ----------4
太忙 ----------5
沒有牙患 ----------6

有牙患但未致嚴重到需要看牙醫 ---- 7
認為牙患會不藥而癒 ---------- 8
距離牙醫診所太遠 ---------- 9
相信牙醫不能治好牙患 ---------- 10
其它原因（請註明）---------- 11

9. 上一次睇牙醫的原因是什麼？
牙齒有問題 ---------- 1
定期檢查 ---------- 2
牙醫吩咐 ---------- 3
是全個治療的其中一次 ---------- 4

10. 上一次接受的治療包括什麼？

	有	無
檢查	1	2
洗牙	1	2
補牙	1	2
牙冠	1	2
根管治療	1	2
牙托治療	1	2
箍牙	1	2
保護牙齒及牙肉指示	1	2
X光檢查	1	2
脫牙	1	2
牙橋	1	2
治療牙周病	1	2
氟素治療	1	2
其它（請註明）	1	2

11. 你幾耐刷一次牙？
從來沒有刷牙 ---------- 1
一個月刷幾次 ---------- 2
一星期刷一次 ---------- 3
每日刷一次 ---------- 4
每日刷二次 ---------- 5
每日刷牙多過兩次 ---------- 6

12. 有沒有用牙膏刷牙？

	有	沒有
	1	2

13. 昨天有沒有用以下之工具清潔牙縫？

	有	沒有
a. 牙籤	1	2
b. 牙線	1	2

C. 現時牙齒狀況

14. 你現在有無牙患？

有 ——— 1
無 ——— 2
不知道 ——— 3

14. a) 如有牙患，你是否知道是什麼？

	有	沒有
i. 蛀牙	1	2
ii. 牙肉出血	1	2
iii. 不美觀	1	2
iv. 其它：_____	1	2

15. 你是否正接受治療？

有	沒有
1	2

如有，請註明：_____

D. 口腔衛生常識

16. 蛀牙是由什麼引起的？

牙虫 ——— 1
經常吃糖或甜品 ——— 2
無刷牙 ——— 3
牙齒生長不好 ——— 4
熱氣 ——— 5
缺含維他命 ——— 6
不知道 ——— 7
其它原因：_____ ——— 8

17. 如果不理會蛀牙，後果會怎樣？

a. 牙齒鬆脫 ---------- 1
b. 牙痛 ---------- 2
c. 牙癌 ---------- 3
d. 口臭 ---------- 4
e. 不知道 ---------- 5

18. 怎樣可防止蛀牙？

a. 刷牙 ---------- 1
b. 減少吃糖或甜品 ---- 2
c. 氟素 ---------- 3
d. 定期檢查 ---------- 4
e. 經常漱口 ---------- 5
f. 其它：_____ ---- 6

19. 點解牙肉會流血？

a. 牙週病 ---------- 1
b. 熱氣 ---------- 2
c. 缺乏維他命 ---------- 3
d. 刷牙不當 ---------- 4
e. 不知道 ---------- 5
f. 其它：_____ ---- 6

20. 牙週病有什麼病徵病狀？

a. 牙痛 ---------- 1
b. 牙肉腫 ---------- 2
c. 牙肉出血 ---------- 3
d. 口臭 ---------- 4
e. 牙齒鬆脫 ---------- 5
f. 不知道 ---------- 6
g. 其它：_____ ---- 7

21. 牙週病是由什麼引起的？

a. 牙虫 ---------- 1
b. 吃糖 ---------- 2
c. 不刷牙 ---------- 3
d. 熱氣 ---------- 4

e. 缺台維他命 ------- 5
f. 刷牙不當 ------- 6
g. 不知道 ------- 7
h. 其它：_____ ----- 8

22. 怎樣可以預防牙週病？
a. 多刷牙 ---------- 1.
b. 減少吃糖 ---------- 2.
c. 保持牙齒清潔 ------- 3
d. 多吃生菜 ---------- 4
e. 多漱口 ---------- 5
f. 不知道 ---------- 6
g. 其它：_____ ------ 7

23. 據你所知，刷牙有什麼用？
只是正常生活習慣 ------- 1
預防蛀牙 ---------- 2
預防牙週病 ---------- 3
預防口臭 ---------- 4
預防牙痛 ---------- 5
防止牙石 ---------- 6
不知道 ---------- 7
其它：_____ ---------- 8

24. 牙線有什麼用？
脫牙 ---------- 1
清潔牙縫 ---------- 2
不知道 ---------- 3
其它：_____ ------ 4

25. 有無聽過氟素？ 有 1 沒有 2.
如有，請註明：_____

26. 有無聽過牙石？ 有 1 沒有 2
如有，請註明：_____

27. 你知不知道洗牙有什麼作用? 知道 1 不知道 2

如知道的話，是有什麼作用:

a. 清除牙石
b. 清除牙漬
c. 減少牙齒敏感
d. 其它 = _____

28. 你知不知道為什麼牙齒會敏感呢? 知道 1 不知道 2

如知道的話，請註明 = _____

29. 你有無聽過垢膜? 有 1 無 2.

如有，請註明 = _____

GROUP 4.3 / 89-90

Questionnaire Code Sheet 1.